

## **Tips for Administering TB Medication to Children and Adults Who Are Unable to Swallow Pills**

Administering TB medications to persons who are unable to swallow pills and capsules can be a challenge. The following recommendations and guidelines will enable nurses and outreach workers to overcome this challenge. (San Diego County, 1995; Charles P. Felton, 2004)

### **General Recommendations**

- All standard anti-tuberculosis drugs can be crushed - INH, ethambutol, pyrazinamide - or opened - Rifampin - and mixed with a small amount of food.
- Do not crush medications too far in advance, because they might absorb the moisture in the air. Medications should be crushed immediately before mixing with the given food.
- When mixing medications with food, use the smallest quantity of food possible. Again, mix the crushed/opened medication with food immediately before administering the medication.
- Pyrazinamide, ethambutol, isoniazid and rifampin can be given together, i.e., mixed together the same small amount of food. However, keep in mind that a large amount of medication mixed into a small amount of food may not be well accepted by the patient. Therefore, it might be necessary to mix each medicine with a small amount of food (foods and flavors may vary), and administer each medicine separately. All medications should be administered at the same time, using directly observed therapy (DOT).
- If the medication is not administered within 30 minutes after crushing/opening, discard it and prepare a new dose.
- INH is the only anti-tuberculosis drug available in a commercially prepared liquid form. Do not use locally prepared syrups or suspensions of other anti-tuberculosis medications, because their stability cannot be assured.

### **Infants (<1 year of age)**

- Liquid medications should be measured and given to an infant using a dropper or a syringe without a needle. Liquid medication can also be administered using just nipple of a baby's bottle.
- Medication can be mixed with a small amount of juice or other liquid (<1 ounce) and administered in a baby's bottle. Make sure that the entire content of the bottle are swallowed. Note: INH is not stable in sugary liquid. Therefore, the use of sugary liquids is not recommended. Again, medication should be administered as soon as it is mixed with food, otherwise it will become unstable.

## **Young Children**

- Both liquid and pill forms of TB medications can be used with young children. For young children receiving treatment for active TB disease, crushed tablets administered with a small amount of food is preferred over the liquid forms of medications. Liquid forms of anti-tuberculosis drugs other than INH are unstable.
- Liquid INH causes abdominal pain and cramping in more than half of the children receiving this medication. For this reason, crushed pills should be used whenever possible.
- Pills can either be swallowed or crushed.
- If a child cannot swallow pills, crush the pills and mix (or layer) with one or two spoonfuls of a non-sugary liquid or soft food (pudding, jelly, applesauce or another food the child likes). Red-flavored applesauce works well for administering rifampin. Medicated food should be followed by ingestion of food without medications.
- Medication should be administered as soon as it is mixed, otherwise will become unstable.

## **Adolescents and adults**

- Encourage children, adolescents and adults who are unable to swallow pills to practice swallowing a candy similar in size to the TB pills; this practice will teach this population how to swallow pills and capsules.
- Tablets tend to SINK; so, instruct patients to tilt their head UP to swallow pills.
- Capsules tend to FLOAT, so instruct the patient to tilt the head DOWN to swallow capsules.

## **Troubleshooting**

- If the patient vomits within 30 minutes after ingesting a medication, the dose should be repeated as soon as the patient is able to take it.
- If the vomiting episode occurs more than 30 minutes after ingesting the medicine, presume that medication absorption has occurred; so, the dose should not be repeated.
- Treatment should continue even if patient has a minor illness such as a cold, ear or throat infection. If the patient has a gastrointestinal virus, treatment should resume as soon as the patient is able to tolerate the medication.

## Available Preparations of Standard Anti-tuberculosis Medications

### *Isoniazid (INH)*

- Available in tablet and syrup form  
50, 100, and 300 mg tablets  
50 mg/5 ml in 70% sorbitol syrup
- Syrup may be preferred form for children < 1 year of age. Sorbitol may cause diarrhea. The syrup form of INH is unlikely to be tolerated in amounts greater than 10- 15ml (100-150 mg INH).
- Although INH is best absorbed in an empty stomach, experience has shown that most patients are unable to tolerate INH without food, and can attain adequate drug levels even when it is taken with a small amount of food.
- If using INH in syrup form, use only a manufactured, USP standard preparation. Do not use locally prepared syrups, because the stability of INH in a liquid containing sugar cannot be assured.

### *Rifampin (RIF)*

- Available in 150 and 300 mg capsules
- Do not use locally prepared rifampin syrups or suspensions, because rifampin may not be stable in such solutions.

### *Ethambutol (ETH)*

- Available as 100 and 400 mg tablets
- Do not use locally prepared ethambutol syrups or suspensions.

### *Pyrazinamide (PZA)*

- Available as 500 mg tablets.
- Do not use locally prepared pyrazinamide syrups or suspensions.

### **Works Cited**

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